

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1-40 (Cancelled).

41. (Previously Presented) A hydrostatic transmission, comprising:

a housing, an interior space of said housing serving as a fluid sump;

a pair of first and second fluid passages disposed in said housing;

a hydraulic pump disposed in said housing;

a hydraulic motor disposed in said housing, wherein said first and second fluid passages are interposed between said hydraulic pump and said hydraulic motor so as to constitute a closed fluid circuit;

a charge fluid passage disposed in said housing so as to be connected with each of said first and second fluid passages for supplying fluid from said fluid sump into said closed fluid circuit;

a first check valve interposed between said charge fluid passage and said first fluid passage, wherein said first check valve allows only a flow of fluid from said charge fluid passage to said first fluid passage;

a second check valve interposed between said charge fluid passage and said second fluid passage, wherein said second check valve allows only a flow of fluid from said charge fluid passage to said second fluid passage;

a drain fluid passage including an orifice disposed in said housing so as to be connected with at least one of said first and second fluid passages so that, when hydraulic pressure in said at least one of said first and second fluid passages is increased, excessive fluid in said at least one of said first and second fluid passages is drained through said drain fluid passage to said fluid sump, wherein said charge fluid passage and said drain fluid passage are open into communication with said fluid sump while said charge fluid passage and said drain fluid passage being separated from each other; and

an oil filter disposed in said fluid sump for filtering fluid to be introduced into said charge fluid passage, wherein said charge fluid passage is open into communication

with said fluid sump inside said oil filter and said drain fluid passage is open into communication with said fluid sump outside said oil filter.

42. (Previously Presented) The hydrostatic transmission as set forth in claim 41, further comprising:

a valve provided in said drain fluid passage, wherein said valve closes when hydraulic pressure in said at least one of said first and second fluid passages is increased beyond a predetermined degree.

43. (Previously Presented) A hydrostatic transmission, comprising:

a housing, an interior space of said housing serving as a fluid sump;

a pair of first and second fluid passages disposed in said housing;

a hydraulic pump disposed in said housing;

a hydraulic motor disposed in said housing, wherein said first and second fluid passages are interposed between said hydraulic pump and said hydraulic motor so as to constitute a closed fluid circuit as a hydrostatic transmission;

a charge fluid passage disposed in said housing so as to be connected with each of said first and second fluid passages for supplying fluid from said fluid sump into said closed fluid circuit, wherein charge fluid flows from a charge fluid inlet into a first valve, then into the charge fluid passage, and into a second valve; and

a drain fluid passage including an orifice disposed in said housing so as to be connected with at least one of said first and second fluid passages so that, when hydraulic pressure in said at least one of said first and second fluid passages is increased, excessive fluid in said at least one of said first and second fluid passages is drained through said drain fluid passage to said fluid sump, wherein said charge fluid passage and said drain fluid passage are open to said fluid sump while said charge fluid passage and said drain fluid passage are separated from each other.

44. (Previously Presented) The hydrostatic transmission as set forth in claim 43, further comprising:

a relief valve intermediately provided in said drain fluid passage, wherein said relief valve is closed when hydraulic pressure in said at least one of said first and second

fluid passages in connection with said drain fluid passage is increased beyond a predetermined degree.

45. (Previously Presented) The hydrostatic transmission as set forth in claim 43, further comprising:

a check valve immediately provided in said drain fluid passage, wherein said check valve allows only a flow of fluid from said at least one of said first and second fluid passages to said fluid sump.

46. (Previously Presented) The hydrostatic transmission as set forth in claim 45, wherein said check valve is interposed between said orifice and said fluid sump.

47. (Previously Presented) The hydrostatic transmission as set forth in claim 43, further comprising:

an oil filter interposed between said orifice of said drain fluid passage and said fluid sump.

48. (Previously Presented) The hydrostatic transmission as set forth in claim 43, further comprising:

a center section having a first side end and a second side end opposite to each other disposed in said housing, said center section forming said first and second fluid passages therein, wherein an opening of said charge fluid passage in communication with said fluid sump is disposed toward said first side end of said center section, and wherein an opening of said drain fluid passage in communication with said fluid sump is disposed toward said second side end of said center section.

49. (Previously Presented) The hydrostatic transmission as set forth in claim 48, wherein said opening of said charge fluid passage in communication with said fluid sump is disposed adjacent to said first side end of said center section.

50. (Previously Presented) The hydrostatic transmission as set forth in claim 49, wherein said charge fluid passage is formed within said center section so as to be disposed adjacent to said first side end.

51. (Previously Presented) The hydrostatic transmission as set forth in claim 48, wherein said opening of said drain fluid passage in communication with said fluid sump is disposed adjacent to said second side end of said center section.

52. (Previously Presented) The hydrostatic transmission as set forth in claim 48, wherein said opening of said charge fluid passage in communication with said fluid sump is disposed adjacent to said first side end of said center section, and wherein said opening of said drain fluid in communication with said fluid sump is disposed adjacent to said second side end of said center section.

53. (Previously Presented) A hydrostatic transmission, comprising:
a housing, an interior space of said housing serving as a fluid sump;
a pair of first and second fluid passages disposed in said housing;
a hydraulic pump disposed in said housing;
a hydraulic motor disposed in said housing, wherein said first and second fluid passages are interposed between said hydraulic pump and said hydraulic motor so as to constitute a closed fluid circuit as a hydrostatic transmission;
a charge fluid passage disposed in said housing so as to be connected with each of said first and second fluid passages for supplying fluid from said fluid sump into said closed fluid circuit, wherein charge fluid flows from a charge fluid inlet into a first valve, then into the charge fluid passage, and into a second valve;
a first oil filter disposed in said fluid sump for filtering fluid to be introduced into said charge fluid passage; and
a drain fluid passage including an orifice disposed in said housing so as to be connected with at least one of said first and second fluid passages so that, when hydraulic pressure in said at least one of said first and second fluid passages is increased, excessive fluid in said at least one of said first and second fluid passages is drained through said drain fluid passage to said fluid sump, wherein said charge fluid passage is

open into communication with said fluid sump inside said first oil filter and said drain fluid passage is open into communication with said fluid sump outside said first oil filter while said charge fluid passage and said drain fluid passage are separated from each other.

54. (Previously Presented) The hydrostatic transmission as set forth in claim 53, further comprising:

a relief valve intermediately provided in said drain fluid passage, wherein said relief valve is closed when hydraulic pressure in said at least one of said first and second fluid passages in connection with said drain fluid passage is increased beyond a predetermined degree.

55. (Previously Presented) The hydrostatic transmission as set forth in claim 53, further comprising:

a check valve intermediately provided in said drain fluid passage, wherein said check valve allows only a flow of fluid from said at least one of said first and second fluid passages to said fluid sump.

56. (Previously Presented) The hydrostatic transmission as set forth in claim 53, wherein said check valve is interposed between said orifice and said fluid sump.

57. (Previously Presented) The hydrostatic transmission as set forth in claim 53, wherein said drain fluid passage is oriented oppositely to said first oil filter.

58. (Previously Presented) The hydrostatic transmission as set forth in claim 53, further comprising:

a center section for having a first side end and a second side end opposite to each other disposed in said housing, said center section forming said first and second fluid passages therein, wherein said first oil filter is disposed toward said first side end of said center section, so that an opening of said charge fluid passage in communication with said fluid sump is disposed toward said first side end of said center section and an

opening of said drain fluid passage in communication with said fluid sump is disposed toward said second side end of said center section.

59. (Previously Presented) The hydrostatic transmission as set forth in claim 58, wherein said opening of said charge fluid passage in communication with said fluid sump is disposed adjacent to said first side end of said center section.

60. (Previously Presented) The hydrostatic transmission as set forth in claim 59, wherein said charge fluid passage is formed within said center section so as to be disposed adjacent to said first side end.

61. (Previously Presented) The hydrostatic transmission as set forth in claim 58, wherein said opening of said drain fluid passage in communication with said fluid sump is disposed adjacent to said second side end of said center section.

62. (Previously Presented) The hydrostatic transmission as set forth in claim 58, wherein said opening of said charge fluid passage in communication with said fluid sump is disposed adjacent to said drain fluid passage in communication with said fluid sump is disposed adjacent to said second side end of said center section.

63. (Previously Presented) A hydrostatic transmission comprising:
a housing, an interior space of said housing serving as a fluid sump;
a pair of first and second fluid passages disposed in said housing;
a hydraulic pump disposed in said housing;
a hydraulic motor disposed in said housing, wherein said first and second fluid passages are interposed between said hydraulic pump and said hydraulic motor so as to constitute a closed fluid circuit;
a charge fluid passage disposed in said housing so as to be connected with each of said first and second fluid passages for supplying fluid from said fluid sump into said closed fluid circuit, wherein charge fluid flows from a charge fluid inlet into a first valve, then into the charge fluid passage, and into a second valve;

a first check valve interposed between said charge fluid passage and said first fluid passage, wherein said first check valve allows only a flow of fluid from said charge fluid passage to said first fluid passage;

a second check valve interposed between said charge fluid passage and said second fluid passage, wherein said second check valve allows only a flow of fluid from said charge fluid passage to said second fluid passage;

a drain fluid passage including an orifice disposed in said housing so as to be connected with at least one of said first and second fluid passages so that, when hydraulic pressure in said at least one of said first and second fluid passages is increased, excessive fluid in said at least one of said first and second fluid passages is drained through said drain fluid passage to said fluid sump, wherein said charge fluid passage and said drain fluid passage are open into communication with said fluid sump while said charge fluid passage and said drain fluid passage are separated from each other; and

a relief valve provided in said drain fluid passage, wherein said relief valve closes when hydraulic pressure in said at least one of said first and second fluid passages is increased beyond a predetermined degree.

64. (Previously Presented) The hydrostatic transmission as set forth in claim 63, further comprising:

a third check valve intermediately provided in said drain fluid passage, wherein said third check valve allows only a flow of fluid from said at least one of said first and second fluid passages to said fluid sump.

65. (Previously Presented) The hydrostatic transmission as set forth in claim 63, wherein said third check valve is interposed between said orifice and said fluid sump.

66. (Previously Presented) The hydrostatic transmission as set forth in claim 63, further comprising:

a center section having a first side end and a second side end opposite to each other disposed in said housing, said center section forming said first and second fluid

passages therein, wherein an opening of said charge fluid passage in communication with said fluid sump is disposed toward said first side end of said center section, and wherein an opening of said drain fluid passage in communication with said fluid sump is disposed toward second side end of said center section.

67. (Previously Presented) The hydrostatic transmission as set forth in claim 66, wherein said opening of said charge fluid passage in communication with said fluid sump is disposed adjacent to said first side end of said center section.

68. (Previously Presented) The hydrostatic transmission as set forth in claim 67, wherein said charge fluid passage and said first and second check valves are formed within said center section so as to be disposed adjacent to said first side end.

69. (Previously Presented) The hydrostatic transmission as set forth in claim 66, wherein said opening of said drain fluid passage in communication with said fluid sump is disposed adjacent to said second side end of said center section.

70. (Previously Presented) The hydrostatic transmission as set forth in claim 66, wherein said opening of said charge fluid passage in communication with said fluid sump is disposed adjacent to said first side end of said center section, and wherein said opening of said drain fluid passages in communication with said fluid sump is disposed adjacent to said second side end of said center section.

71. (Previously Presented) The hydrostatic transmission as set forth in claim 63, further comprising:

a first oil filter disposed in said fluid sump for filtering fluid to be introduced into said charge fluid passage, wherein said charge fluid passage is open into communication with said fluid sump inside said first oil filter and said drain fluid passage is open into communication with said fluid sump outside said first oil filter.

72. (Previously Presented) The hydrostatic transmission as set forth in claim 61, wherein an opening of said drain fluid passage into communication with said fluid sump is oriented oppositely to said first oil filter.

73. (Previously Presented) The hydrostatic transmission as set forth in claim 63, further comprising:

an oil filter disposed in said fluid sump for filtering fluid to be introduced into said charge fluid passage, wherein both said charge fluid passage and said drain fluid passage are open into communication with said fluid sump inside said oil filter.